

## **REMARKS**

The Office Action dated February 27, 2004, has been received and carefully noted. The amendments made herein and the following remarks are submitted as a full and complete response thereto.

Claims 1, 5 and 9 have been amended. Applicant submits that the amendments made herein are fully supported in the specification and the drawings as originally filed, and therefore no new matter has been added. Accordingly, claims 1-10 are pending in the present application and are respectfully submitted for consideration.

### **Formal Matters**

The specification was objected to because some words of the specification appear to run together without spacing in between them. Claims 4, 7 and 8 are objected to for the same reason.

Applicant respectfully submits that the word-spacing issue was a result of a specific formatting function applied to the text of the specification. The text of the present application was formatted to have both right and left justification provided by the word-processing software, which caused the words to appear as if they were running together without any spacing in between them. However, Applicant submits that the words of the text are indeed spaced properly to form proper English words. Therefore, Applicant respectfully requests reconsideration and that the objection be withdrawn.

Claims 1-10 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1, 5 and 9 have been amended for grammatical and clarity purposes as well as to more clearly recite the subject matter of the claimed invention. Therefore, Applicant respectfully requests that the rejection be withdrawn.

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### **Claims 1-10 Recite Patentable Subject Matter**

Claim 1-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dhong et al. (U.S. Patent No. 6,014,764, hereinafter "Dhong") in view of Whetsel et al. (U.S. Patent No. 6,405,335, hereinafter "Whetsel"). In making this rejection, the Office Action has taken the position that Dhong discloses substantially all of the elements of the claimed invention with the exception "that the inputs are buffered." The Office Action cited Whetsel for allegedly curing the deficiencies that exist in Dhong. Applicant respectfully traverses the rejection and submit that each of claims 1-10 recites subject matter that is neither disclosed or suggested in the cited prior art.

Each of claims 1, 5 and 9 recites an integrated circuit device having a plurality of input terminals. Each of the claimed inventions recited in claims 1, 5 and 9 comprises, among other features, respectively, "a plurality of boundary scan registers which input selectively an output of the input buffer or an input of a test data, holds the input data, and outputs selectively the held input data or an output of the serial parallel conversion circuit."

Dhong discloses a method of scanning an integrated circuit, by converting a parallel scan input (scan data and scan control) to serial, passing the serial scan input through scan circuitry to create a serial scan output, converting the scan output from serial to parallel, transmitting the scan output in parallel from the integrated circuit to the tester. Dhong further provides a tester clock signal that is derived by synchronizing the tester to a divided clock signal (1/N) of the integrated circuit. Communications take place at a speed of the tester clock signal, but the scan operates at the full operational speed of the device under test.

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Whetsel discloses an integrated circuit comprising core circuitry including functional inputs and functional outputs, an input pad and an output pad. Whetsel also provides a scan distributor circuitry connected between the input pad and, selectively, at least some of the functional inputs, through a multiplexer. Scan collector circuitry connects selectively between at least some of the functional outputs and the output pad, through a demultiplexer. A strobe is inputted to a series of buffers 2208, 2210, 2212, and 2214 connected such that the output of the first buffer drives scan path 1 and the input of the second buffer, the second buffer drives the input of scan path 2 and the input of the third buffer, and so on until the last buffer drives only the last scan path.

Applicant respectfully submits that each of claims 1, 5 and 9 recites subject matter that is neither disclosed nor suggested by the cited prior art. In particular, neither Dhong nor Whetsel, taken together or in combination, disclose or suggest at least the limitation of "a plurality of boundary scan registers which input selectively an output of the input buffer or an input of a test data, holds the input data, and outputs selectively the held input data or an output of the serial parallel conversion circuit."

As characterized by the Office Action, Dhong uses the steps of transmitting a scan input in parallel from a tester to the integrated circuit, converting the scan input at the integrated circuit from parallel to serial, and passing the serial scan input through scan circuitry of the integrated circuit to create a serial scan output. The Office Action further characterizes Whetsel as teaching an integrated circuit for testing in which the input signal is input to a series of input buffers connected to the individual scan paths (column 28, lines 45-61). However, Applicant submits that Office Action failed to indicate at least the limiting feature of "a plurality of boundary scan registers which input

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selectively an output of the input buffer or an input of a test data, holds the input data, and outputs selectively the held input data or an output of the serial parallel conversion circuit" in the cited prior art. Therefore, Applicant respectfully submits that claims 1, 5 and 9 are allowable.

To establish *prima facie* obviousness, each feature of a rejected claim must be taught or suggested by the applied art of record. See M.P.E.P. §2143.03 and *In re Royka*, 490 F.2d 981 (CCPA 1974). As explained above, Dhong and Whetsel, alone or in combination, do not teach or suggest each feature recited by pending Claims 1, 5 and 9. Accordingly, for the above provided reasons, Applicants respectfully submit that pending Claims 1, 5 and 9 are not rendered obvious under 35 U.S.C. § 103 by Dhong and Whetsel.

As claims 2-4 depend from claim 1, claims 6-8 depend from claim 5, and claim 10 depends from claim 9, Applicant respectfully submit that claims 2-4, 6-8 and 10 should be deemed allowable for at least the same reasons claims 1, 5 and 9 are allowable, as well as for the additional subject matter recited therein.

Therefore, Applicants respectfully request withdrawal of the rejection.

### **Conclusion**


In view of the above, Applicant respectfully submits that each of claims 1-10 recites subject matter that is neither disclosed nor suggested in the cited prior art. Applicant also submits that this subject matter is more than sufficient to render the claims non-obvious to a person of ordinary skill in the art, and therefore, respectfully requests that claims 1-10 be found allowable and that this application be passed to issue.

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If for any reason, the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact the Applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper has not been timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 108066-00037.**

Respectfully submitted,



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Enclosure: Petition for Extension of Time

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